

## Klawock Lake Subsistence Sockeye Salmon Project 05-603 2005 Annual report

Sockeye salmon runs returning to Klawock Lake are an integral part of the history, culture, and contemporary lifestyle of the village of Klawock, and many Klawock residents feel the runs may be smaller than they were in the past. Our project was started in 2001 to address a need for better information about Klawock sockeye runs and improve methods for estimating escapement and subsistence harvest in this system. In 2005, we counted 14,840 sockeye salmon at a weir on the outlet stream, and we verified this count with a mark-recapture estimate of about 13,700 fish (95% confidence interval 12,400–15,300). We also attempted spawning population estimates for each of three main lake tributaries, and they totaled about 10,500 fish (CV=28–40% for the individual estimates). Although less precise, these Jolly-Seber estimates captured at least 70% of total escapement, and provided specific information for each spawning stream. The sockeye escapement in 2005 was nearly identical with the average annual escapement of about 14,800 fish for the five years 2001–2005. However, the subsistence harvest of Klawock Lake sockeye salmon in 2005 was almost a complete failure, with only about 175 fish harvested in an extended season. Therefore the overall run size for 2005, counting both escapement and subsistence harvest, was about 5,000 fish smaller than in 2001–2004, with the entire loss being taken by the subsistence users. Despite the appearance of stability in overall run sizes in 2001–2005, we are concerned about a possible decline in the productive capacity of the lake, evidenced by an apparent increase in smolt age recently. Possible factors affecting sockeye production in Klawock Lake include habitat degradation caused by logging and road building in the watershed, and excessive output of hatchery fry, including both sockeye and coho salmon.

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